



EARTH ENVIRONMENTAL
& GEOTECHNICAL

Coal Mining Risk Assessment

Olympic Ltd

Fallows Way

Whiston

Knowsley

February 2024

On behalf of

Olympic Oils

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COAL MINING RISK ASSESSMENT

FALLOWS WAY

WHISTON

KNOWSLEY

MERSEYSIDE

FOR

OLYMPIC OILS

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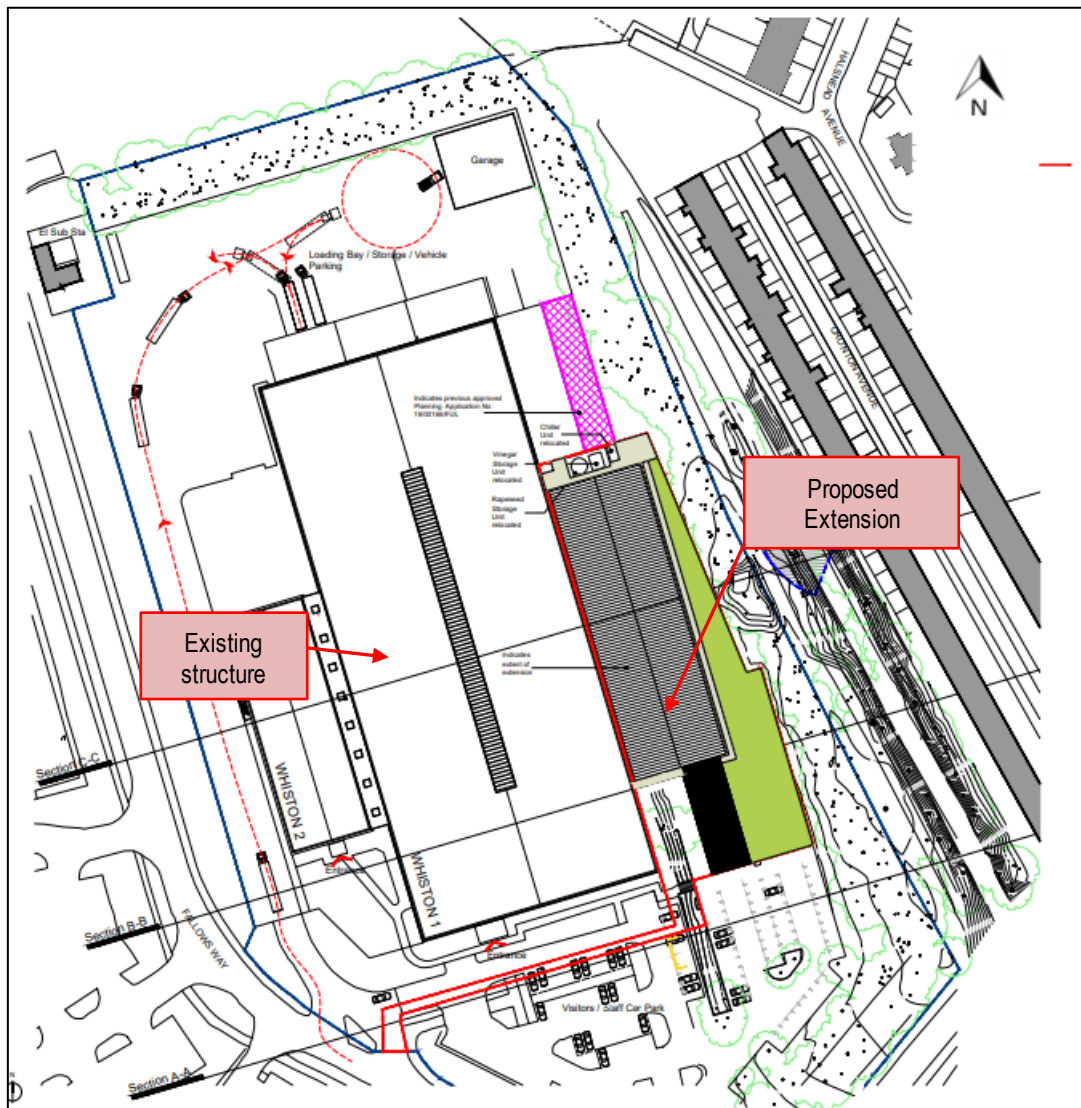
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1.0 INTRODUCTION

Appointment

- 1.1 Earth Environmental & Geotechnical Ltd has been commissioned by Smith Young on behalf of Olympic Oils (the Client) to undertake a Coal Mining Risk Assessment at Olympic Oils Ltd, Fallows Way, Whiston, Knowsley, L35 1RZ.
- 1.2 It is understood that the Client intends the erection of an extension to the main building for use a storage unit (B8) and associated works.
- 1.3 A planning application (23/02738/FUL) has been submitted to Knowsley Council.
- 1.4 Vehicle access will be gained from Fallows Way via Windy Arbor Road, Whiston.
- 1.5 A proposed development plan has been provided and is shown as Figure 1.

Figure 1: Proposed Development Plan



Objective

- 1.6 The purpose of the Coal Mining Risk Assessment is to collate available geological, mining, and historical data in order to assess the potential for the site to be affected by underground mining.
- 1.7 This report has been drafted in accordance with the Coal Authority (CA) Guidance Risk Based Approach to Development Management, Version 4, 2017.

Sources of Information

- 1.8 The Coal Mining Risk Assessment compiles a review of the following information sources:
- British Geological Survey of England and Wales , Runcorn Sheet 97, 1/50,000 series 1980 edition.
 - British Geological Survey of England and Wales , Runcorn Sheet 107SE, six-inch series 1953 edition.
 -
 - Coal Authority Interactive Map Viewer.
 - Coal Authority Mining Report.
 - British Geological Survey online borehole records.
 - Google Earth imagery.
 - Online Historical Ordnance Survey maps.
 - Site Investigations in Areas of Mining Subsidence, FG Bell, 1975.
 - The threat of abandoned mines on the stability of urban areas, Barry Clarke, IAEG2006 Paper Number 379, The Geological Society of London, 2006.
 - The collapse of shallow coal mine workings, Durham theses, Durham University, Garrard, 1981.
 - Knowsley Council planning portal.
 - British Geological Survey, "GeoIndex," [Online]. Available: <http://mapapps2.bgs.ac.uk/geoindex/home.html>.
 - The collapse of shallow coal mine workings, Durham theses, Durham University, Garrard, 1981.
 - National Library of Scotland, British Geological Survey Scotland, <https://maps.nls.uk/>

2.0 SITE LOCATION AND DESCRIPTION

- 2.1 The site is located on land adjacent to Olympic Oils, Fallows Way, Whiston, Knowsley, L35 1RZ. The site is situated approximately 1.8km southwest of Whiston Train Station.
- 2.2 The approximate National Grid Reference for the centre of the site is SJ 46179 90146 (X: 346179 Y: 390146).
- 2.3 The site is an irregular shaped parcel of land which comprises hard standing ground. The maximum dimensions of the site are 15m east to west and 20m north to south.
- 2.4 The site boundary is an extension of an existing large structure which currently occupies the immediate vicinity.
- 2.5 Olympic Oils Ltd is a one of the UK's largest packers and distributors of edible oils and fats and a major producer of mayonnaise and sauces.
- 2.6 The west of the site is adjacent to the existing warehouse structure Olympic Oils Ltd
- 2.7 The eastern boundary is demarcated by a wooded area which demarcates the boundary between Olympic Oils and a residential area.
- 2.8 The general surrounding area comprises of residential and commercial warehouse units within an urban setting, with Stadt Moers Park located adjacent to the north of Olympic Oils Ltd.
- 2.9 A location plan is shown below as Figure 2.

Figure 2: Site Location Plan



3.0 ASSESSMENT OF DATA

Geological Information

- 3.1 The geology of the site has been determined from geological maps for the area and examination of Coal Authority (CA) records.

British Geological Survey Published Data Assessment

- 3.2 The BGS states there are superficial underlying the site consisting of Devensian Till, commonly known as Boulder Clay.
- 3.3 The solid geology beneath the site is shown to be the Pennine Middle Coal Measures Formation, comprising sandstone.
- 3.4 There is 1 BGS borehole record within 250m of the site. The closest available borehole log, that allows for further assessment of the local geology or shallow coal mining regime, is located 250m southwest of the site (Figure 3).

Figure 3: BGS Boreholes



- 3.5 BGS borehole record (SJ48NE291) shows clay underlain by a siltstone rockhead at 3.2m bgl.

- 3.6 An extract from the most recently published geological map (1:50,000) showing the approximate site location and key local geological features are presented in Figure 4.
- 3.7 The geological map shows sandstone underlying the site.
- 3.8 The direction of dip of local strata is 12 degrees (from the horizontal) to the south/southwest.
- 3.9 The geological map reveals an inferred un-named coal seam to the north of the site. . This is therefore postulated to underlie the site at a shallow depth.
- 3.10 Based on a dip angle of twelve degrees and rockhead at 5m, the coal seam is postulated to lie 29m below the site.

Coal Authority Records

- 3.11 Reference to the Coal Authority Online Interactive viewer (extract shown as Figure 5) shows the site to be partially (northern section) located within a Development High Risk area due to a locally outcropping coal seam.
- 3.12 A Coal Authority Mining Report has been acquired for the site. This indicates that there has been past underground mining beneath the site. The shallowest worked coal seam beneath the site was the London Delph(BIN) Coal seam, which was last mined in 1881, at a depth of 87m.
- 3.13 It is recorded to have an extraction thickness of 1.80m with a dip of 11.3 degrees to the southwest.
- 3.14 The report states that there are probable unrecorded shallow workings beneath the site.
- 3.15 The Coal Authority reports suggests that there are no local outcrops.
- 3.16 There is 1 mine shaft entry recorded within 100m of the site. This refers to shaft 346389-002 which has not been treated.
- 3.17 There are records of licensed and unlicensed opencast mining within 500m of the site (Figure 5).
- 3.18 There are no faults, fissures or break lines are recorded on site.
- 3.19 There are no records of claims regarding coal mining subsidence within 50m of the site boundary.
- 3.20 There are no records of any managed tips or remediated sites within 500m of the site.
- 3.21 No records of mine gas have been recorded within 500m of the site boundary.

Figure 4: BGS Geology Map Extract 1:50,000

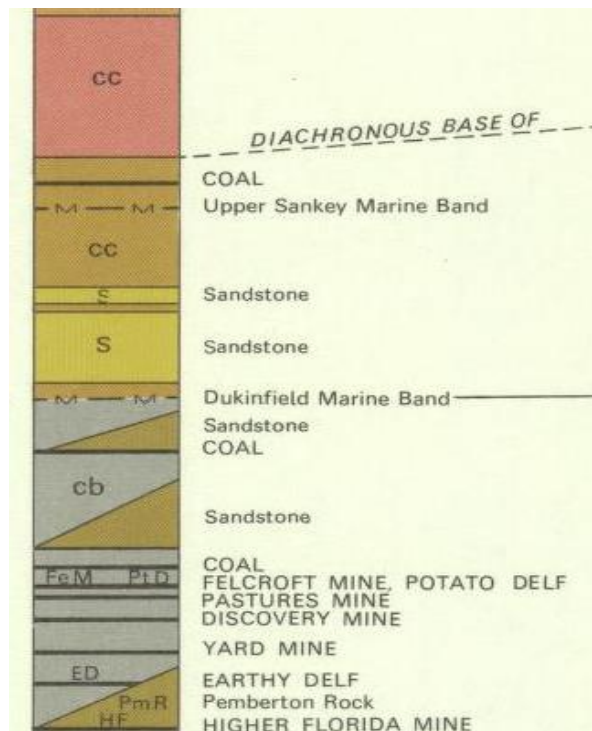
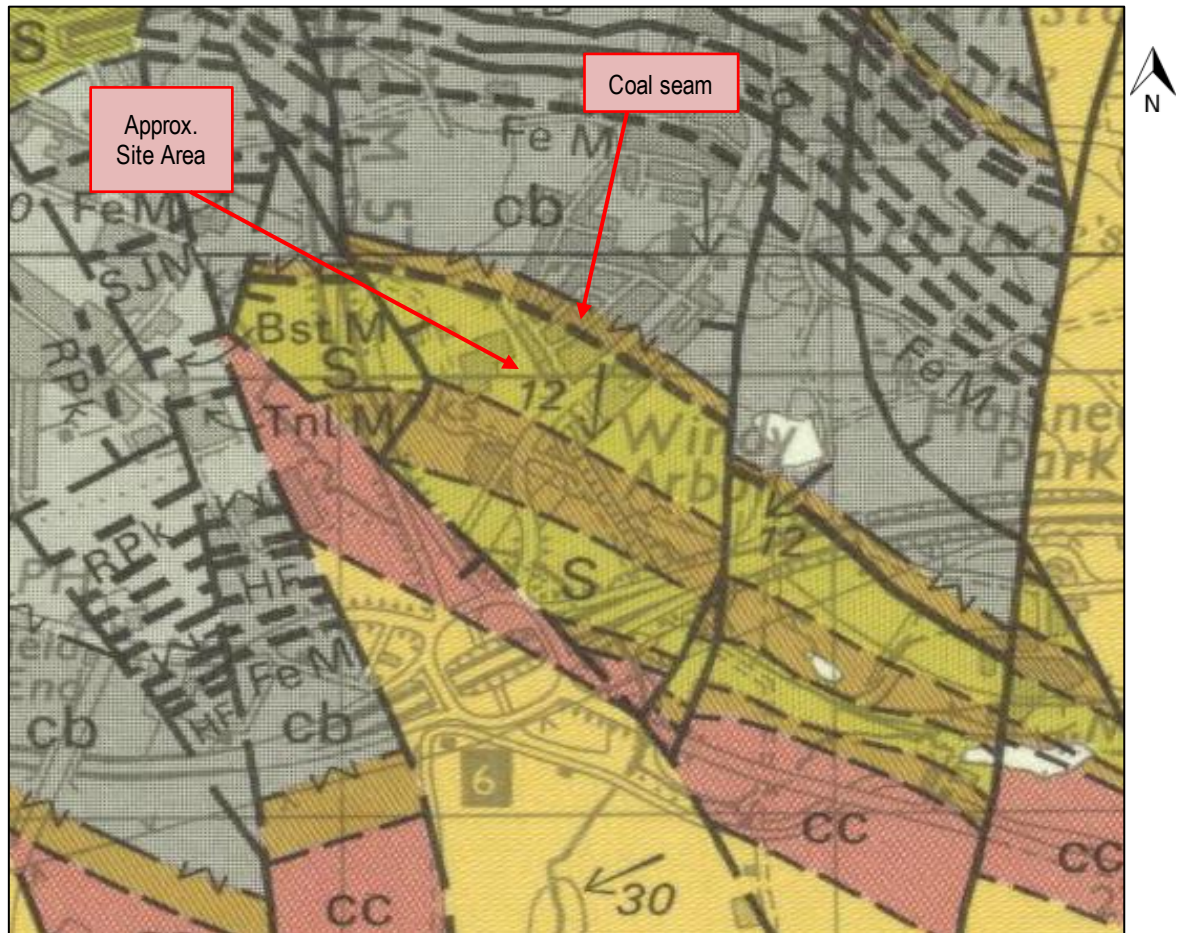
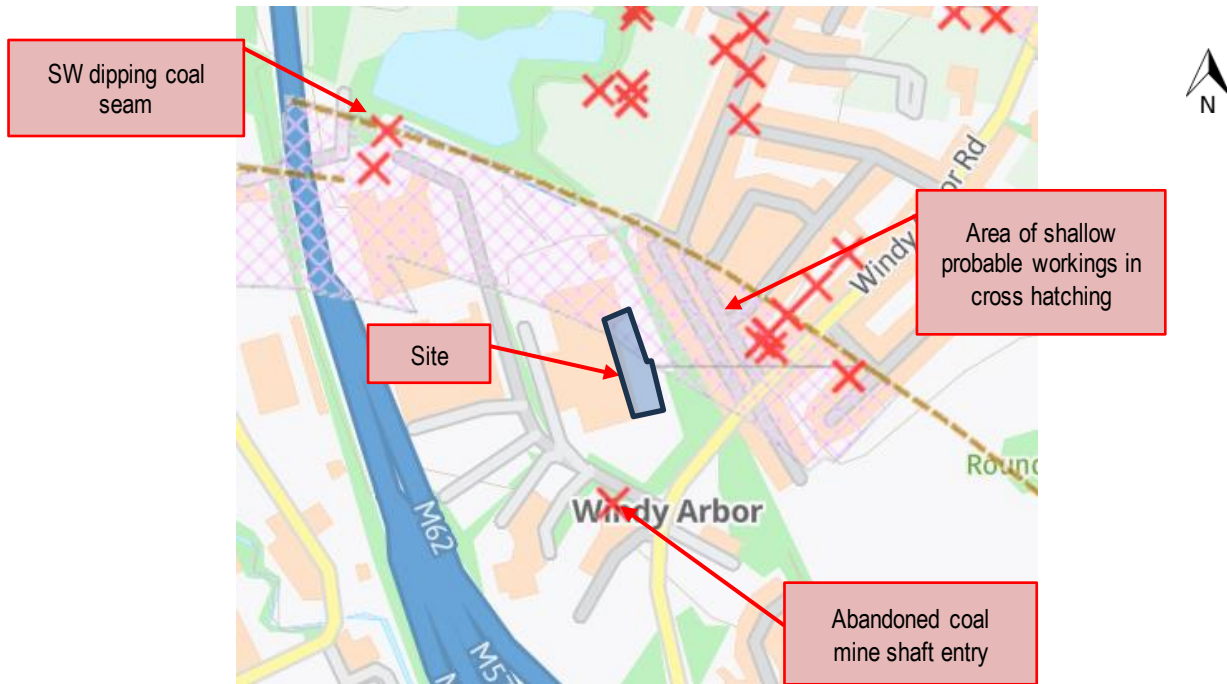


Figure 5: Coal Authority Interactive Map Extract



4.0 COAL MINING RISK ASSESSMENT

Scope of Coal Mining Risk Assessment

- 4.1 Objectives of the coal mining risk assessment are to provide a desk-based assessment of available geological and mining information relating to the site (and wider area) and to use this information so as to identify risks present to the development from the legacy of mining.
- 4.2 As part of the risk assessment, potential mitigation measures (if required) should be considered, including any necessary remedial works.
- 4.3 The outcome of the risk assessment should demonstrate to the Local Authority that the proposed development is or can be made safe (and stable) to meet the requirements of the National Planning Policy Framework (NPPF).

Data Limitations

- 4.4 It should be appreciated that it did not become a legal requirement to deposit coal mining abandonment plans until the 1870's and that this requirement was not rigorously enforced for some time after. Many shallow coal seams were worked prior to the introduction of first edition Ordnance Survey Maps and information on these workings is often not available. Therefore, if coal seams were accessible then there is the potential that they could have been worked by formal or informal means.
- 4.5 It is also possible that if unrecorded workings are present then unrecorded mine entries may be present.

Coal Mining Risks

- 4.6 The risks associated with coal mining are as follows:
 - Collapse of relict workings beneath buildings causing damage to the building fabric and infrastructure.
 - Migration of mine gases from old mine workings and mine entries resulting in accumulation of flammable and asphyxiating gases in confined areas.
 - Consolidation of relict workings and overlying strata causing structural defects in building fabric and infrastructure.
 - Failure of mine entries causing loss of ground beneath building and external areas.
 - Spontaneous combustion of old mine workings.

Conclusions

- 4.7 It is understood that the Client intends the erection of an extension to the main building for use a storage unit (B8) and associated works.
- 4.8 Reference to the Coal Authority Online Interactive viewer shows the site to be partially (northern section) located within a Development High Risk area.
- 4.9 The Coal Authority also report indicates that the site is located within an area of probable shallow coal mine workings beneath the site.
- 4.10 Furthermore, the Coal Authority indicates that there has been past underground mining beneath the site. The shallowest worked coal seam beneath the site was the London Delph (BIN) Coal seam, which was last mined in 1881, at a depth of 87m.

Proposed Mitigation Strategy

- 4.11 Information suggests there could be a risk of historical shallow workings being present beneath the development area.
- 4.12 As a result, a site investigation is required in order to further assess local geology and coal mining regime.
- 4.13 The drilling of boreholes will require a permit from the Coal Authority with the development of a risk assessment and method statement.
- 4.14 This report should allow for planning permission to be granted with conditions imposed in relation to the site investigation.

APPENDIX 1

COAL AUTHORITY CONSULTANTS MINING REPORT

APPENDIX 2

REPORT LIMITATIONS

REPORT LIMITATIONS

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The services are based upon Earth Environmental & Geotechnical Ltd observations of existing physical conditions at the site gained from a walkover survey of the site together with Earth Environmental & Geotechnical Ltd interpretation of information including documentation, obtained from third parties and from the client on the history and usage of the site. The findings and recommendations contained in this report are based in part upon information provided by third parties, and whilst Earth Environmental & Geotechnical Ltd have no reason to doubt the accuracy and that it has been provided in full from those it was requested from, the items relied on have not been verified.

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Where field investigations have been carried out these have been restricted to a level of detail required to achieve the stated objectives of the work. Ground conditions can also be variable and as investigation excavations only allow examination of the ground at discrete locations. The potential exists for ground conditions to be encountered which are different to those considered in this report. The extent of the limited area depends on the soil and groundwater conditions, together with the position of any current structures and underground facilities and natural and other activities on site. In addition, chemical analysis was carried out for a limited number of parameters [as stipulated in the contract between the client and Earth Environmental & Geotechnical Ltd] based on an understanding of the available operational and historical information, and it should not be inferred that other chemical species are not present.

The groundwater conditions entered on the exploratory hole records are those observed at the time of investigation. The normal speed of investigation usually does not permit the recording of an equilibrium water level for any one water strike. Moreover, groundwater levels are subject to seasonal variation or changes in local drainage conditions and higher groundwater levels may occur at other times of the year than were recorded during this investigation.

Any site drawing(s) provided in this report is (are) not meant to be an accurate base plan but is (are) used to present the general relative locations of features on, and surrounding, the site.